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No union was found to exist between the cells of low plants where each cell is able to perform all the metabolic functions. An exception to this statement must perhaps be made of the *Volvox* and certain others of this family. The fungi were not examined.

E. L. G.

Recent Literature on the Diatomaceæ.

Diatomaceæ of North America. Rev. Francis Wolle.

There has long been an urgent demand for a work upon diatoms at a reasonable cost. Dr. Wolle has met this want admirably in the present work. Students of the Diatomaceæ will also appreciate the work which the author has done in bringing together a large number of illustrations that have heretofore been almost inaccessible, for it is well known that the literature bearing upon the subject is scattered and costly. A valuable feature is the reprinting from "The Lens," of Prof. H. L. Smith's "Conspectus of the Families and Genera of the Diatomaceæ." It would have been well, however, if Dr. Wolle had refrained from specifying certain genera in the Conspectus, as not North American. Several of the genera thus indicated are undoubtedly North American.

The plates, 112 in number, are well executed. It is to be regretted that a rather large list of errata in the text has been rendered necessary, owing to the author's serious illness, while the work was in course of publication.

Atlas der Diatomaceen-kunde. A. Schmidt.

Fascicles 39 and 40 have just been issued, thus bringing the work up to Plate 160. Sendai, Oamaree, and Atlantic City, each contribute a number of new species. The continued disability of the veteran diatomist, Herr Grunow, has prevented his assistance in preparing the present number.

On the Structure of the Pleurosigma Valve. T. F. Smith, F. R. M. S.

Diatom Structure—The Interpretation of Microscopical Images.

Jacob D. Cox, LL.D., F.R.M.S. (Journal of New York Microscopical Society, Vol. vii. No. 2. April, 1891).

Recent improvements in microscopical objectives have rendered possible far more accurate information in regard to the

character of diatom structure than was formerly possessed. The two papers mentioned are valuable contributions to the literature of the subject. Mr. Smith's paper is accompanied by two plates, containing twenty excellent phototype illustrations.

Le Diatomiste. J. Tempère, Paris.

The fourth number of this serial, just issued, is entirely devoted to a monograph upon the genus *Pleurosigma*, by M. H. Peragallo. The article embraces sixteen pages of text, and is accompanied by five plates, containing one hundred and nine figures. A synoptical table is given, which is so concise that it is likely to afford material aid in tracing species. C. H. K.

Index to Recent Literature relating to American Botany.

Abies religiosa. (Gard. Chron. ix. 304, figs. 69, 70).

A Botanical Excursion into Lycoming and Luzerne Counties, [Pa.] (College Student, xi. 108-110).

An interesting account of an autumn expedition by Messrs J. K. Small and A. A. Heller, students in Franklin and Marshall College. In the list of plants collected we note the discovery of *Aster concinnus*, Willd., as of special interest.

Apodanthes—Two Undescribed Species of. B. L. Robinson. (Bot. Gaz. xvi. 82-84, Pl. ix).

Descriptions and representations of *Apodanthes Pringlei*, Watson, on branches of *Dalea frutescens* and *A. globosa*, Watson, on *Bauhinia lunarioides*, both collected by Mr. C. G. Pringle, in the Sierra Madre, near Monterey.

Bessera elegans. (Gard. and For. iv. 124, f. 24).

Black Rust of Cotton; a Preliminary Note. George F. Atkinson. (Bot. Gaz. xvi. 61-65).

A discussion of the parts played in the above disease by *Cercospora Gossypina*, *Colletotrichum Gossypii*, *Macrosporium nigricanticum*, [n. sp.], *Phyllosticta Gossypina* and *Alternaria* sp.? *Cuscuta Glomerata with its Host—The Union of.* W. C. Stevens. (Trans. Kans. Acad. Sci. xii. 163, 164, illustrated).

Erythræa Pringleana Wittr. nov. spec. Veit Wittrock. (Bot. Gaz. xvi. 85). Based on C. G. Pringle's, No. 2595.

Mr. Pringle adds the following note: "It may be well enough to state in this connection that what was distributed as '*Microcala*